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NTE74LS132
Integrated Circuit
TTL – Quad 2–Input Positive NAND Schmitt Trigger

Description:

The NTE74LS132 is a quad 2–input positive NAND Schmitt trigger in a 14–Lead plastic DIP type package. Each circuit functions as a 2–input NAND gate, but because of the Schmitt action, it has different input threshold levels for positive (V_{T+}) going and for negative going (V_{T-}) signals.

This device is temperature compensated and can be triggered from the slowest of input ramps and still give clear, jitter–free output signals.

Absolute Maximum Ratings: (Note 1)

Supply Voltage, V_{CC} 7V
DC Input Voltage, V_{IN} 7V
Operating Temperature Range, T_A . . . . . 0°C to +70°C
Storage Temperature Range, T_{stg} . . . . . –65°C to +150°C

Note 1. Unless otherwise specified, all voltages are referenced to GND.

Recommended Operating Conditions:

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V_{CC}	4.75	5.0	5.25	V
High–Level Output Current	I_{OH}	–	–	–0.4	mA
Low–Level Output Current	I_{OL}	–	–	8	mA
Operating Temperature Range	T_A	0	–	+70	°C

Electrical Characteristics: (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Positive–Going Threshold Voltage	V_{T+}	V_{CC} = 5V	1.4	1.6	1.9	V
Negative–Going Threshold Voltage	V_{T-}	V_{CC} = 5V	0.5	0.8	1.0	V
Hysteresis Voltage	V_H	V_{CC} = 5V	0.4	0.8	–	V
Input Clamp Voltage	V_{IK}	V_{CC} = MIN, I_I = –18mA	–	–	–1.5	V

Note 2. .For conditions shown as MIN or MAX, use the appropriate value specified under “Recommended Operation Conditions”.

Note 3. All typical values are at V_{CC} = 5V, T_A = +25°C.

Electrical Characteristics (Cont'd): (Note 2, Note 3)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
High Level Output Voltage	V_{OH}	V_{CC} = MIN, V_I = 0.5V, I_{OH} = −0.4mA	2.7	3.4	–	V
Low Level Output Voltage	V_{OL}	V_{CC} = MIN, V_I = 1.9V, I_{OL} = 4mA	–	0.25	0.4	V
		V_{CC} = MIN, V_I = 1.9V, I_{OL} = 8mA	–	0.35	0.5	V
Positive−Going Threshold Current	I_{T+}	V_{CC} = 5V, V_I = V_{T+}	–	−0.14	–	mA
Negative−Going Threshold Current	I_{T-}	V_{CC} = 5V, V_I = V_{T-}	–	−0.18	–	mA
Input Current	I_I	V_{CC} = MAX, V_I = 7V	–	–	0.1	mA
High Level Input Current	I_{IH}	V_{CC} = MAX, V_I = 2.7V	–	–	20	μA
Low Level Input Current	I_{IL}	V_{CC} = MAX, V_I = 0.4V	–	–	−0.4	mA
Short−Circuit Output Current	I_{OS}	V_{CC} = MAX, Note 4	−20	–	−100	mA
High Level Supply Current	I_{CCH}	V_{CC} = MAX	–	5.9	11	mA
Low Level Supply Current	I_{CCL}	V_{CC} = MAX	–	8.2	14	mA

Note 2. .For conditions shown as MIN or MAX, use the appropriate value specified under "Recommended Operation Conditions".

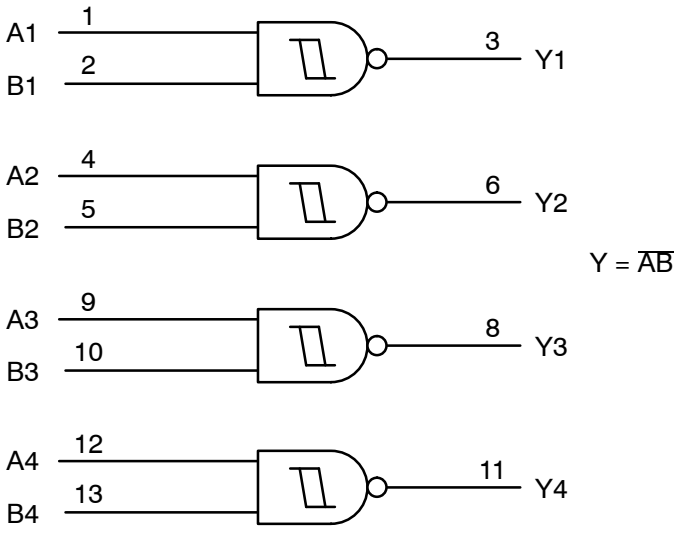
Note 3. All typical values are at V_{CC} = 5V, T_A = +25°C.

Note 4. Not more than one output should be shorted at a time, and duration of the short−circuit should not exceed one second.

Switching Characteristics: (V_{CC} = 5V, T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Propagation Delay Time From Any Input to Y Output)	t_{PLH}	R_L = 2kΩ, C_L = 15pF	–	15	22	ns
	t_{PHL}		–	15	22	ns

Logic Diagram



Pin14 = V_{CC}
Pin7 = GND

Pin Connection Diagram